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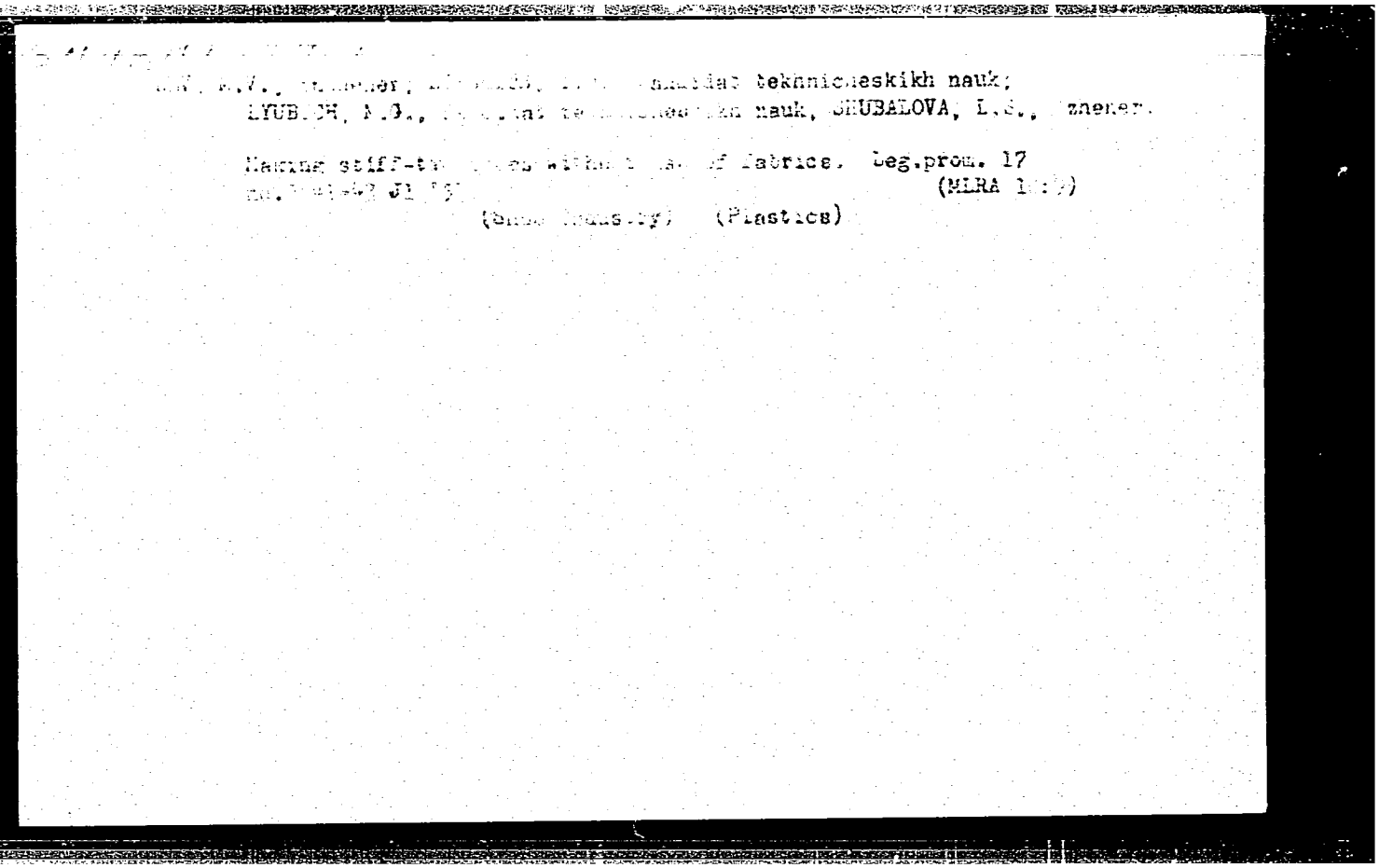
(Mathematical analysis--Textbooks)



[illegible], M.V., [illegible], [illegible] kandidat tekhnicheskikh nauk;
LYUBICH, M.D., [illegible] kandidat tekhnicheskikh nauk, SHUBALOVA, L.S., inzhener.

Making stiff-tw[illegible] with [illegible] of fabrics. Leg.prom. 17
no.[illegible] Jl '57 (MLRA 10:7)
(Shoe industry) (Plastics)

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L 32577-66 EWT(1)/T/FCS(k) GD/WR

ACC NR: AP6000521 SOURCE CODE: UR/0142/65/008/005/0561/0573

AUTHOR: Shubarin, Yu. V.; Gorobets, N. N.

ORG: none

TITLE: Effect of the amplitude-phase field distribution on the polarization diagram in the aperture of a shf antenna

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 5, 1965, 561-573

TOPIC TAGS: shf antenna, antenna polarization

ABSTRACT: An antenna having a planar aperture of arbitrary shape is considered. The electric-vector components of the field in the antenna far region are expressed in terms of the components of the radiation electric vector, by means of a vectorized Kirchhoff's integral. Conditions are developed for synthesizing a specified polarization diagram. If the amplitude-phase distribution of one of the orthogonal components is known, the problem of synthesizing is reduced to determining the second orthogonal component; the reverse Fourier transformation is recommended. To ensure the circular antenna polarization within the front half-space, the amplitude

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ACC NR: AP6000521

distributions of the orthogonal components should be identical, and the phase shift between them should be $\pm\pi/2$. In a rectangular cophasal aperture, the different rates of decrease of the amplitude distributions of the orthogonal components result in a reduced ellipticity. The linear phase distortion reduces the ellipticity in proportion to the cosine of the major-lobe angle; this reduction can be compensated for by a proper choice of the amplitude distribution. Orig. art. has: 5 figures and 50 formulas.

SUB CODE: 09 / SUBM DATE: 11Nov63 / ORIG REF: 007 / OTH REF: 002

Card 2/2

PHASE I BOOK EXPLOITATION SOV/5071

Shubarin, Yuriy Vasil'yevich

Antenny sverkhvysokikh chastot (Superhigh-Frequency Antennas) Khar'kov, Izd-vo Khar'kovskogo univ., 1960. 283 p. 7,000 copies printed.

Resp. Ed.: A.I. Tereshchenko, Docent; Ed.: I.L. Bazilyanskaya; Tech. Ed.: N.I. Nikulina.

PURPOSE: This book has been approved by the Ministry of Higher and Secondary Education of the Ukrainian SSR as a textbook for radio engineering departments of UkrSSR schools of higher education. It can also be used by students in radio engineering divisions of civilian amd military schools of higher education and by aspirants and technical personnel working with antennas.

COVERAGE: The book presents the methods of investigation, the arrangement, principle of operation, and methods of computing parameters of "superhigh frequency" - decimetric and centimetric - radio-wave antennas. It is stated that the majority of the methods of investigating and designing antennas may be applied, as described

Card ~~1/6~~

Ca

9.1300,9.1200,9.3700

77968
SOV/109-5-3-22/26

AUTHORS: Shubarin, Yu. V., Anishchenko, T. H.

TITLE: Waveguide-Slot Radiator With Elliptical Polarization on a Circular Waveguide (Brief Communication)

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 3, pp 518-520 (USSR)

ABSTRACT: On the inside walls of a cylindrical waveguide (Fig. 1) excited by an H_{11} wave, the amplitude ratio of orthogonal magnetic field components is:

$$\frac{H_\varphi}{H_z} = i\frac{\gamma a}{\upsilon^2}\operatorname{tg}\varphi = -\frac{i}{\upsilon}\sqrt{\left(\frac{2\pi a}{\lambda\upsilon}\right)^2 - 1}\operatorname{tg}\varphi. \qquad (1)$$

where a is waveguide radius; $\upsilon = 1{,}841$ is first root of Bessel's function first derivative;

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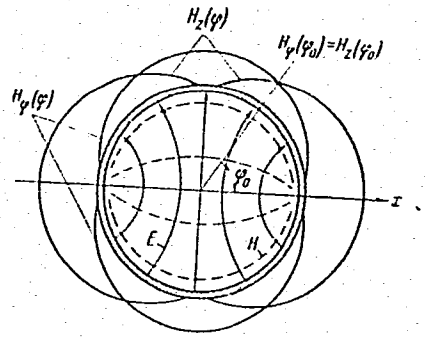
$$\gamma = \sqrt{\left(\frac{2\pi}{\lambda}\right)^2 - \left(\frac{\nu}{a}\right)^2}$$

is propagation constant; λ is wavelength; φ is polar angle in waveguide cross section.



Card 2/9 Fig. 1. H_{11} wave field configuration in a round waveguide.

Waveguide-Slot Radiator With Elliptical Polarization on a Circular Waveguide (Brief Communication)

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SOV/109-5-3-22/26

Equation (1) shows that the magnetic field orthogonal components on the waveguide wall are mutually shifted in phase by 90°, and their amplitude ratio is a function of wavelength, waveguide radius, and polar angle. The magnetic field vector on waveguide wall (and also the surface current vector) is elliptically polarized, and its rotation is reversed when the direction of wave propagation along the waveguide changes, or values of φ go through multiples of $\pi/2$. The condition $H_\varphi/H_z = \pm i$ is satisfied for angles:

$$\varphi_0 = \pm \operatorname{Arc\,ctg} \frac{1}{\nu} \sqrt{\left(\frac{2\pi a}{\lambda \nu}\right)^2 - 1} + n\pi. \qquad (2)$$

(where n = 0; 1); the magnetic field vector is circularly polarized; the cross-shaped aperture radiates in the direction of a normal to the tangent plane of the waveguide for a field with circular polarization. This

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type of radiator propagates such a radiation within a certain range of frequencies, while a radiator on a rectangular waveguide can radiate a circularly polarized field on one frequency only. Variation of frequency causes only a rotation of the polarization plane of wave H_{11}. Using Eq. (1), the dependence of the uniformity coefficient of the radiated field polarization characteristic on the turning angle of the H_{11} wave polarization plane in the waveguide and on the frequency may be calculated. The results were checked experimentally. The experimental installation (Fig. 2) consists of a section of a round waveguide with a cross-slot 1, transition junction from round to rectangular cross section 2, full resistance transformer 3, antenna equivalent 4, generator 5, modulated by rectangular pulses attenuator 6, wavemeter 7. A klystron, type K-31(λ = 3.5-4.36 cm), and wavemeter 35-И were used. The radiated field polarization was analyzed by a rotating linearly polarized horn antenna 8 with

Waveguide-Slot Radiator With Elliptical Polarization on a Circular Waveguide (Brief Communication)

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attenuator 9, detector section 10 (field indicator type 38-И) and measuring amplifier type 28-И (11). The cross slot was cut in the round section of 30 mm diam waveguide. The slot was calculated for f = 7,282 mc; Length of slot 19 mm, width 1.5 mm. At the beginning of an experiment the crosswise slot was set at an angle φ_0 to the polarization plane of wave H_{11} in the waveguide, so as to obtain a field radiation with circular polarization. By regulation of the full resistance transformer, the uniformity coefficient of the polarization characteristic was made as close to one as possible. Then, the uniformity coefficient in relation to the turning angle of wave H_{11} polarization with respect to the slot was measured. Figure 3a shows experimental results for f = 7,282 mc by dots, which closely follow the theoretical curve for angles where the polarization is close to circular. The same is true for Fig. 3b for f = 7,653 mc, and for f = 8,495 mc per Fig. 3c. The uniformity coefficient of polarization characteristic for f = 7,282 mc reaches 0.95, and the dumbbell

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Waveguide-Slot Radiator With Elliptical Polarization on a Circular Waveguide (Brief Communication)

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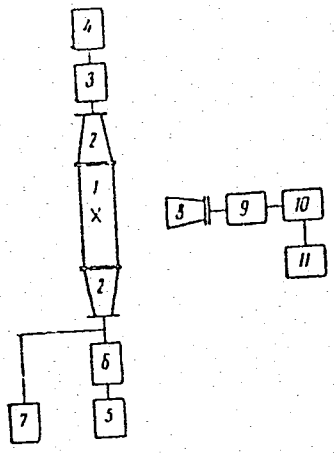

Fig. 2. Experimental installation layout.

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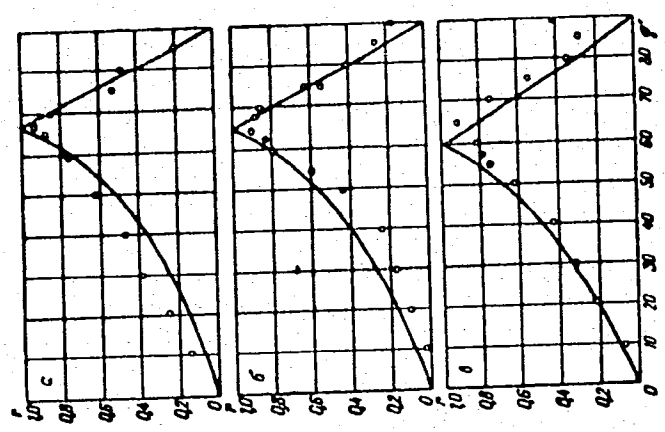

Fig. 3. Uniformity coefficient of polarization characteristic vs. angle φ of polarization plane turn.

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Waveguide-Slot Radiator With Elliptical Polarization on a Circular Waveguide (Brief Communication)

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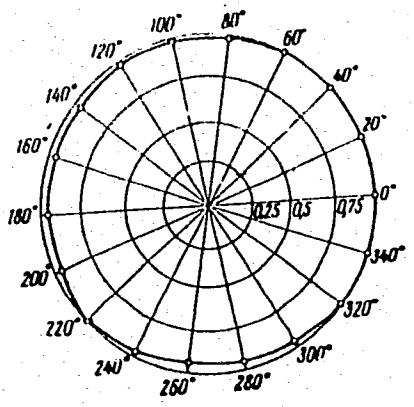

Fig. 4. Dumbbell curve taken at f = 7,282 mc and φ_o = 67°.

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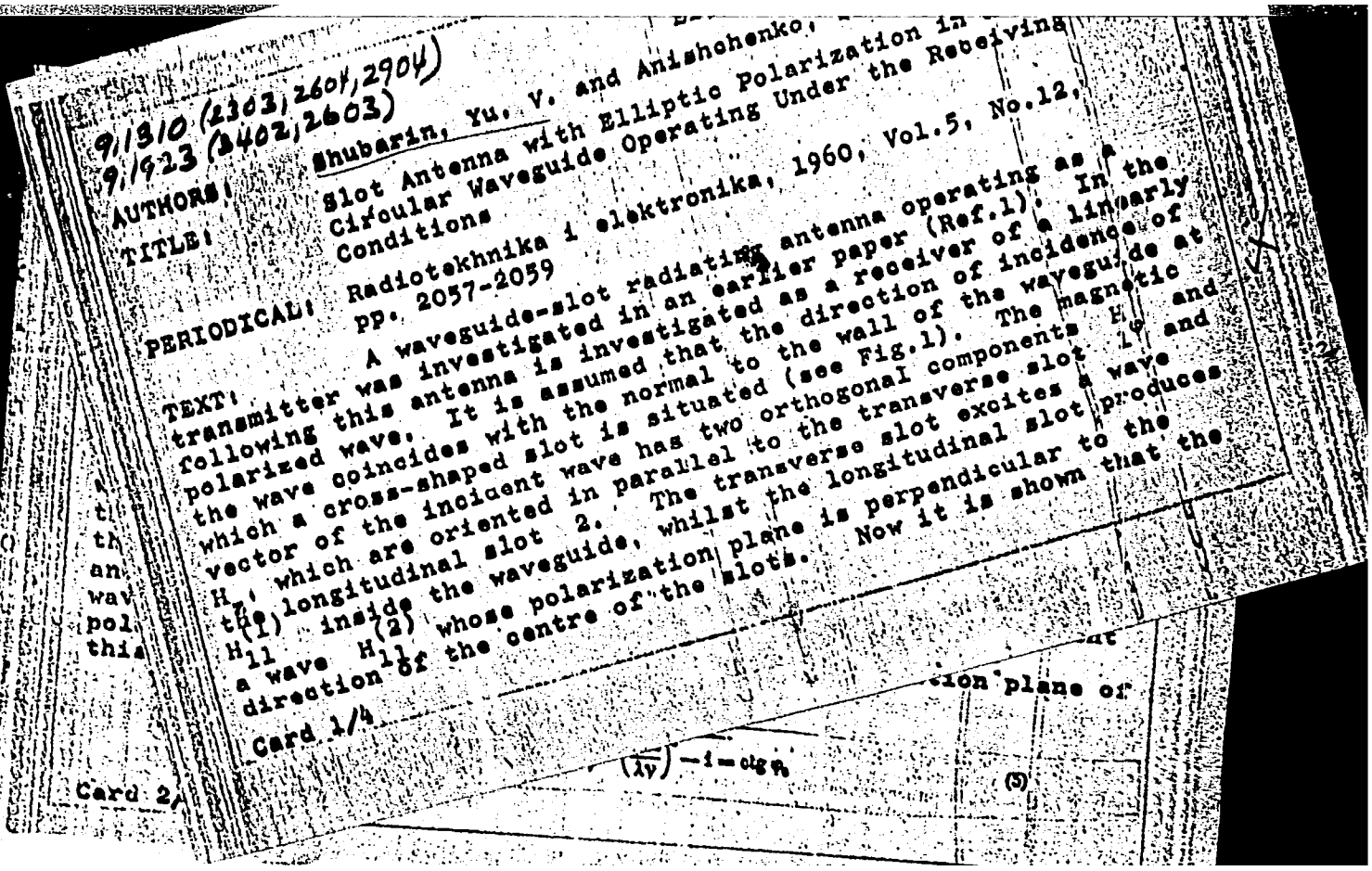
curve in Fig. 4 is close to a circle. Figure 3b is of special interest, because at the respective frequency the E_{01} wave is present, as well as basic H_{11} wave. The slotted waveguide radiator can be used in a number of installations as: (1) antenna with controllable polarization characteristic, which can be regulated by generally known components, e.g., ferrite polarization plane shifters using the Faraday effect; (2) radiator of circularly polarized field, working over a frequency range. There are 4 figures; and 1 Soviet reference.

ASSOCIATION: Khar'kov State University imeni A. M. Gor'kiy (Khar'kovskiy gosudarstvennyy universitet imeni A. M. Gor'kogo)

SUBMITTED: July 7, 1959



9,1310 (2303, 2604, 2904)
9,1923 (3402, 2603)

AUTHORS: Shubarin, Yu. V. and Anishchenko,

TITLE: Slot Antenna with Elliptic Polarization in Circular Waveguide Operating Under the Receiving Conditions

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.12, pp. 2057-2059

TEXT: A waveguide-slot radiating antenna operating as a transmitter was investigated in an earlier paper (Ref.1). In the following this antenna is investigated as a receiver of a linearly polarized wave. It is assumed that the direction of incidence of the wave coincides with the normal to the wall of the waveguide at which a cross-shaped slot is situated (see Fig.1). The magnetic vector of the incident wave has two orthogonal components H_φ and H_z, which are oriented in parallel to the transverse slot 1 and the longitudinal slot 2. The transverse slot excites a wave $H_{11}^{(1)}$ inside the waveguide, whilst the longitudinal slot produces a wave $H_{11}^{(2)}$ whose polarization plane is perpendicular to the direction of the centre of the slots. Now it is shown that the

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$$\left(\frac{\lambda_0}{\lambda_v}\right) - 1 = \alpha_{kp} \qquad (5)$$

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Slot Antenna with Elliptic Polarization in a Circular Waveguide Operating Under the Receiving Conditions

where $\eta_o = 90° - \varphi_o$, where φ_o is the angle at which the slot radiates a field with circular polarization. The system was also investigated experimentally by means of equipment consisting of an oscillator which was modulated by means of rectangular pulses, an attenuator, a wavemeter, a linearly polarized horn antenna, a section of a circular waveguide with the slot, which was connected to a standard rectangular waveguide, a detector section and a measuring amplifier. The cross-shaped slot was cut in the circular waveguide whose diameter was 23 mm. The length of the slot was 10 mm and its width 1.5 mm. The experimental results are shown in two figures. These give the dependence of the field regularity coefficient r on the angle η between the polarization plane and the unit vector $\bar{\varphi}$. It is found that the experimental results are in good agreement with the theoretical curves calculated from Eqs. (4) and (5). It is concluded on the basis of the experimental and theoretical data that the above antenna can be used as a polarizer permitting the conversion of a linearly

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S/109/60/005/012/029/035
E192/E582

Slot Antenna with Elliptic Polarization in a Circular Waveguide Operating Under the Receiving Conditions

polarized field into an arbitrarily polarized field. There are 4 figures and 1 Soviet reference.

SUBMITTED: May 3, 1960

Fig.1

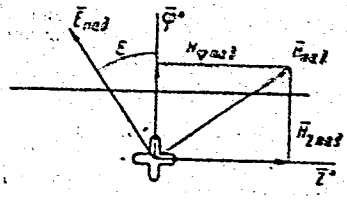

Рис. 1. Разложение падающей волны на составляющие

Card 4/4

SHUBARIN, Yuriy Vasil'yevich; ZORKIN, Anatoliy Fedorovich; TERESHCHENKO, A.I., kand. fiz.-matem. nauk, otv. red.; KOVALEVA, Z.G., red.; TROFIMENKO, A.S., tekhn. red.

[Antenna measurements at superhigh frequencies] Antennye izmereniia na sverkhvysokikh chastotakh; antennyi praktikum. Khar'kov, Izd-vo Khar'kovskogo univ., 1962. 170 p. (MIRA 16:12)
(Antennas (Electronics)) (Radio measurements)

S/058/63/000/002/065/070
A160/A101

AUTHORS: Shubarin, Yu. V., Anishchenko, T. N.

TITLE: The measurement of the coefficients of the scattering matrix of irregularities in a waveguide

PERIODICAL: Referativnyy zhurnal, Fizika, no. 2, 1963, 38 - 39, abstract 2Zh234 ("Uch. zap. Khar'kovsk. un-t", 1962, v. 121, Tr. Radiofiz. fak., 5, 100 - 107)

TEXT: Proposed is a modification of the method of short-circuited piston, developed by Deshan (Referativnyy zhurnal, Fizika, no. 6, 1954, 6437). The modification reduces the volume of the experiment and eliminates graphical plots. Investigated is the theory of the method, and a description is given of the block diagram of the measuring installation and of the measuring method. Measurements were carried out of the scattering coefficients of a slotted radiator in the form of a cross-shaped slot cut into the wall of a rectangular waveguide. The measurements were conducted experimentally by Deshan's method and by the proposed method. The experimental dependences of the modules of the reflection

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The measurement of the coefficients of...

coefficient and of the transmission coefficient on the wavelength in the range of $\lambda = 3.4 \div 3.4$ cm, obtained by both methods, have the same character (the maximum relative discrepancy in the results of the measurements in the wave range is not more than 0.15). On the whole, the calculated data well correspond to the experimental ones.

Yu. Bogatyrev

[Abstracter's note: Complete translation]

Card 2/2

L 10058-63
FCS(k)/EWT(1)/BDS/EEC-2/EED-2--Pi-4/Pj-4/Pl-4--WR
ACCESSION NR: AR3000386 S/0058/63/000/004/H022/H022

SOURCE: RZh. Fizika, Abs. 4Zh126

68

AUTHOR: Shubarin, Yu. V.; Anishchenko, T. N.

TITLE: Slot radiator with rotating polarization using round waveguide

25B

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 121, 1962, Tr. Radiofiz. fak., t. 5, 108-114

TOPIC TAGS: Slot antennas, polarized, H sub 11 mode

TRANSLATION: A radiator is considered in the form of a cruciform slot or a round aperture in the sidewall of a round waveguide in the H sub 11 mode. Since the longitudinal and the transverse currents at each point of a round waveguide in the H sub 11 mode are shifted in time by 90°, such a radiator is excited with elliptic polarization. By varying the position of the slot relative to the plain of polarization of the wave in the waveguide, it is possible to regulate the degree of ellipticity of radiation and adjust the radiator for circular

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ACCESSION NR: AR3000386

polarization. When the radiator is used as a receiving antenna, the external linearly polarized field excites in the waveguide waves with elliptic polarization, which have opposite directions of rotation to the right and to the left of the radiator. Approximate formulas are derived for the ellipticity of the field and for the location of the radiator such as to insure circular polarization. Frequency plots are presented for the necessary angle of location of the radiator in order to obtain circular polarization, as well as plots of the coefficient of uniformity of the radiated field as a function of the angle of location of the radiator on the wall of the waveguide. A. Gridin

DATE ACQ: 14May63 ENCL: 00 SUB CODE: SP

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Card 2/2

L 10065-63 EWT(l)/FCS(k)/BDS/EEC-2/EED-2--ASD/ESD-3/APGC--Pi-4/
Pj-4/Pl-4--WR
ACCESSION NR: AR3000387 S/0058/63/000/004/H022/H022

73

SOURCE: RZh. Fizika, Abs. 4Zh127

AUTHOR: Shubarin, Yu. V.; Anis-chenko, T. N.

TITLE: Variation of parameters of antennas with rotating polarization

CITED SOURCE: Uch. zap. Khar'kovsk. un-t. v. 121, 1962, Tr. Radiofiz. fak., no. 5, 115-120

TOPIC TAGS: antennas, rotating polarization, variation of parameters

TRANSLATION: Formulas are derived for the connection between the directivity pattern and the gain, for orthogonal components of the field, with analogous parameters for the total field of an antenna. Cases are considered where the total field is resolved into orthogonal linear components with circular polarization of opposite rotations. A procedure is proposed for determining the directivity pattern and the gain by measuring the partial directivity diagrams for the orthogonal components. If the maxima of the radiation for the orthogonal field components coincide in direction, then in order to determine the total

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L 10065-63
ACCESSION NR: AR3000387

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antenna diagram in terms of power it is sufficient to measure its partial directivity characteristics for the othogonal components and the ratio of the amplitudes of these components to the principal radiation maxima. An analogous rule has been found for the determination of the gain. An experimental verification of the proposed procedure, carried out by means of control measurements of the gain by the substitution method, confirms their correctness.
A. Gridin

DATE ACQ: 14May63 ENCL: 00 SUB CODE: SP

lm/nh
Card 2/2

L 8535-65 EWT(1)/EEC-4/EEC(b)-2/EEC(t)/FCS(k) Pi-4/Pj-4/P1-4/Pac-4/Pae-2
SSD/AFTC(b)/ASD(a)-5/AFWL/BSD/AFETR/RAEM(a)/ESD(c)/ESD(gs)/ESD(t)/RAEM(t) WR
ACCESSION NR: AR4044058 S/0058/63/000/011/H017/H017

SOURCE: Ref. zh. Fizika, Abs. 11Zh141 B

AUTHOR: Shubarin, Yu. V.

TITLE: The polarization diagram of the open end of a round waveguide excited by an elliptically polarized wave H_{11}

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 132, 1962, Tr. Radiofiz. fak., v. 7, 22-32

TOPIC TAGS: waveguide, round waveguide, polarized wave, polarization pattern, antenna field, antenna, wave

25B

TRANSLATION: There is solved approximately the problem of determination of the polarization pattern of the field radiated by the open end of a round waveguide or a conical horn during excitation of an elliptically polarized wave H_{11}. For the purpose of simplification of the derivation of formulae for vector E in the distant zone and for the polarization diagram is used the method of the decomposition of the

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ACCESSION NR: AR4044058

field in the aperture of the antenna into two components: one - polarized in the observation plane, the other - in the orthogonal plane. Here the problem of determining the field in any plane passing through the normal to the aperture reduces to finding antenna fields in planes E and H, in which radiation of transverse polarization is absent. Calculation of field components in the distant zone is done with the help of the Kirchhoff integral. Breakdown of the field in the antenna aperture into two components ensures automatic calculation of the field of transverse polarization and can be useful during investigation of different types of antennas with axial symmetry. There is derived an expression for the polarization diagram of the open end of a round waveguide (conical horn) which differs from the expression for the polarization diagram of wave H11 in the emitting waveguide by the presence of a factor equal to the ratio of the directional patterns of the radiator in planes H and E. In detail are investigated cases of circular and elliptical polarization of a wave in a waveguide. There are given graphs of the dependence of the coefficient of ellipticity of the field of radiation on the direction.

SUB CODE: EC, EM ENCL: 00

Card 2/2

ACCESSION NR: AR4023752 S/0274/64/000/001/A056/A057

SOURCE: RZh. Radiotekhnika i elektrosvyaz', Abs. 1A359

AUTHOR: Shubarin, Yu. V.; Dmitriyev, V. M.; Lyapunov, N. V.

TITLE: Radiation from the open end of a waveguide of complicated shape

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 132, 1962, Tr. radiofiz. fak., v. 7, 33-41

TOPIC TAGS: antenna, waveguide open end antenna, h shaped waveguide, cruciform waveguide, directivity pattern, matching with free space, Kirchhoff integral

TRANSLATION: Expressions are obtained for the directivity pattern of the open ends of an H-shaped or cruciform waveguide in the E and H planes. Unlike the known mirror-antenna radiators, made in the

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ACCESSION NR: AR4023752

form of a rectangular or round waveguide, the H-shaped and cruciform radiators ensure better matching with the free space and extend the possibility of obtaining a directivity pattern of desired shape. The Kirchhoff integral is used to calculate the field. The formulas obtained are used to calculate the directivity pattern. An Experimental investigation has shown that the measured diagrams are 20--40% narrower than the theoretical ones for all the radiators. The best matching with free space is afforded by the cruciform radiator. Bibliography, 3 titles. N. B.

DATE ACQ: 03Mar64 SUB CODE: GE, SP ENCL: 00

Card 2/2

L 8537-65 EWT(1)/EEC-4/EEC(t)/EEC(b)-2/FCS(k) Pi-4/Pj-4/Pl-4/Pac-4/Pae-2
RAEM(a)/AFETR/ASD(a)-5/ESD(c)/ESD(t)/RAEM(t) WR S/0058/63/000/01[illegible]/H017/H017
ACCESSION NR: AR4044059

SOURCE: Ref. zh. Fizika, Abs. 11Zh142

B

AUTHOR: Shubarin, Yu. V.; Gorobets, N. N.

TITLE: Polarization structure of the field of radiation from the open end of a round waveguide or a conical horn excited by wave H_{11}

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 132, 1962, Tr. Radiofiz. fak., v. 7, 42-49

TOPIC TAGS: polarization structure, waveguide, round waveguide, polarized wave, radiation field

TRANSLATION: The polarization structure of a field of radiation from the open end of a round waveguide (or conical horn) excited by linearly-polarized wave H_{11} is investigated by means of approximate integration of the differential equation of projections of the electrical lines of force onto a hemisphere of large radius. Here there is used an expression for the electrical vector in the distant zone.

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ACCESSION NR: AR4044059

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found with the help of the vectorized Kirchhoff integral. The results of the investigations are presented in the form of graphs of projections of the electrical lines of force of the field of radiation onto the hemisphere. It is shown that polarization structure of the field depends strongly on the ratio of the radius of the aperture to the wavelength. Results of theoretical investigation for a round waveguide are confirmed by experiment. There is given a description of an experimental installation and a method of carrying out the experiment.

SUB CODE: EC, EM ENCL: 00

Card 2/2

ACCESSION NR: AR4023749 S/0274/64/000/001/A050/A050

SOURCE: RZh. Radiotekhnika i elektrosvyaz', Abs. 1A315

AUTHORS: Shubarin, Yu. V.; Yatsuk, L. P.

TITLE: Slot antenna with adjustable polarization diagram

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 132, 1962. Tr. radiofiz. fak., v. 7, 50-52

TOPIC TAGS: antenna, slot antenna, cruciform slot antenna, ellipticity coefficient, iris diaphragm, inductive diaphragm, inductive capacitive diaphragm, adjustable antenna polarization, antenna polarization

TRANSLATION: A method is described for regulating the ellipticity coefficient of a cruciform slot antenna cut in the broad wall of a rectangular waveguide. The best ellipticity coefficient is attained

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ACCESSION NR: AR4023749

by varying the field configuration inside the waveguide with the aid of an inductive or inductive-capacitive diaphragm. It is ascertained experimentally that the most effective action is produced by an inductive-capacitive diaphragm. The best ellipticity coefficient is obtained when the capacitive part of the diaphragm is in a ratio of 0.24 to the height of the waveguide. Three illustrations. Bibliography, 2 titles. B. T.

DATE ACQ: 03Mar64 SUB CODE: GE, SP ENCL: 00

Card 2/2

L 8536-65 EWT(l)/EEC-4/EEC(t)/EEC(b)-2/FCS(k) Pi-4/Pj-4/Pl-4/Pac-4/Pae-2
RAEM(a)/AFETR/ASD(a)-5/ESD(c)/ESD(t)/RAEM(t) WR
ACCESSION NR: AR4044060 S/0058/63/000/011/R017/R018

SOURCE: Ref. zh. Fizika, Abs. 11Zh144

AUTHOR: Shubarin, Yu. V.; Yatsuk, L. P.

TITLE: The directional properties of a system of staggered radiators

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 132, 1962, Tr. Radiofiz. fak., v. 7, 191-198

TOPIC TAGS: staggered radiator, directional property, waveguide

TRANSLATION: Gives an expression for the grid-combination factor of a system of cophasal waveguide-slit staggered radiators, on the basis of which is estimated the effectiveness of supression, with its help, of spurious maxima of the first order in the directional pattern. In detail is investigated the dual, i.e., consisting of two tiers, radiator rod. It is shown that in this case in meridional plane $\varphi = 0$ (passing through the normal to the surface of the antenna), the maximum of the first order is almost completely suppressed and its level relative to the maximum of zero order constitutes $1/(2M-1)$, where $M \gg 1$ - is the number of

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L 8536-65
ACCESSION NR: AR4044060

radiators in the tier. When $d_y/\lambda_{crit} \leqslant 1/2$, ($d_y$ is the distance between tiers λ_{crit} is the critical wave length in waveguide) with increasing $|\varphi|>0$ the maximum of first order increases and attains its greatest magnitude at $\varphi = \pm 90°$ (i.e., in the plane of the grid), remaining, by level, less than the maximum of zero order. When $d_y/\lambda_{crit} > 1/2$ and with an increase $|\varphi|>0$, the maximum of first order attains the level of the maximum of zero order. Gives graphs for an estimate of the levels of the maxima of first order vs. d_y. There is shown the possibility of supression of maxima of first order with the use of two "staggered" grids, located a specific distance from each other. The conclusion is drawn that in most cases it is impermissible to calculate the directional pattern of a "staggered" grid by the formulas for a linear system of radiators.

SUB CODE: EC, MA ENCL: 00

Card 2/2

ACCESSION NR: AR4023748 S/0274/64/000/001/A046/A047

SOURCE: RZh. Radiotekhnika i elektrosvyaz', Abs. 1A288

AUTHORS: Shubarin, Yu. V.; Yatsuk, L. P.

TITLE: Directional properties of a system of radiators arranged in checkerboard fashion

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 132, 1962. Tr. Radiofiz. fak., v. 7, 191-198

TOPIC TAGS: antenna, antenna array, planar in phase antenna, checkerboard antenna, first order maximum, first order maximum suppression, undesirable maximum suppression

TRANSLATION: The directional properties of a planar in-phase radiator array, arranged in checkerboard fashion, is investigated and the efficiency with which the first-order maxima are suppressed with its

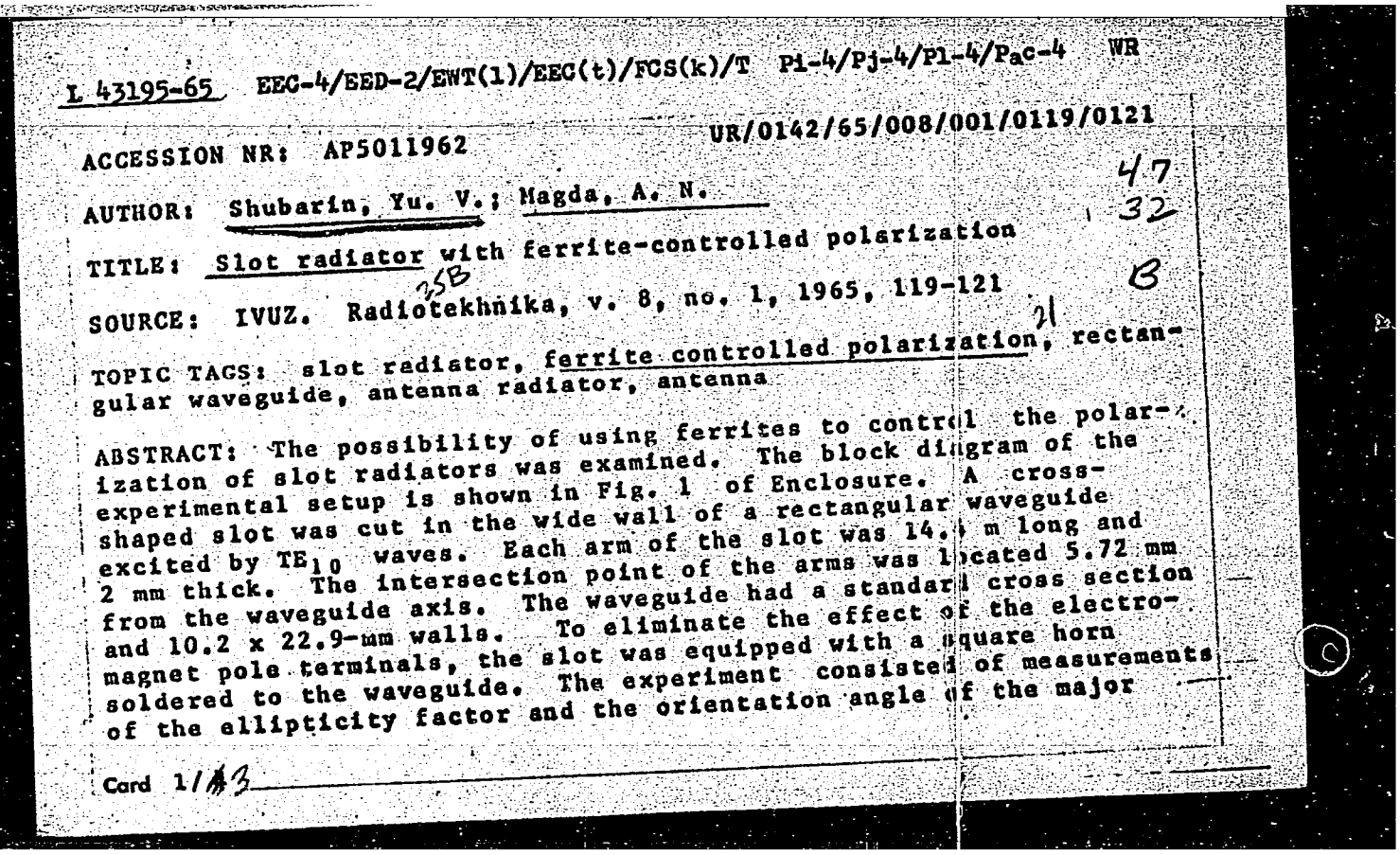
Card 1/2

ACCESSION NR: AR4023748

aid is estimated. It is shown that when its directional properties are calculated, such an array cannot be regarded as a linear system of dipoles. The suppression of the first-order maxima in this array takes place only in a plane passing through the normal to the array plane, and first-order maxima can arise and attain intolerable values in inclined planes. Computation graphs are obtained for estimating the level of the first-order maxima as functions of the distance between the tiers in the checkerboard array. Undesirable maxima can be suppressed with the aid of a second array located alongside. This method is recommended if the distance between the arrays can be made of the order of one-quarter wavelength. Six illustrations. Bibliography, 5 titles. B. P.

DATE ACQ: 03Mar64 SUB CODE: GE, SP ENCL: 00

Card 2/2



L 43195-65 EEC-4/EED-2/EWT(1)/EEC(t)/FCS(k)/T Pi-4/Pj-4/Pl-4/Pac-4 WR

ACCESSION NR: AP5011962 UR/0142/65/008/001/0119/0121

AUTHOR: Shubarin, Yu. V.; Magda, A. N. 47 32

TITLE: Slot radiator with ferrite-controlled polarization 35B 21 B

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 1, 1965, 119-121

TOPIC TAGS: slot radiator, ferrite controlled polarization, rectangular waveguide, antenna radiator, antenna

ABSTRACT: The possibility of using ferrites to control the polarization of slot radiators was examined. The block diagram of the experimental setup is shown in Fig. 1 of Enclosure. A cross-shaped slot was cut in the wide wall of a rectangular waveguide excited by TE_{10} waves. Each arm of the slot was 14.[illegible] m long and 2 mm thick. The intersection point of the arms was located 5.72 mm from the waveguide axis. The waveguide had a standard cross section and 10.2 x 22.9-mm walls. To eliminate the effect of the electromagnet pole terminals, the slot was equipped with a square horn soldered to the waveguide. The experiment consisted of measurements of the ellipticity factor and the orientation angle of the major

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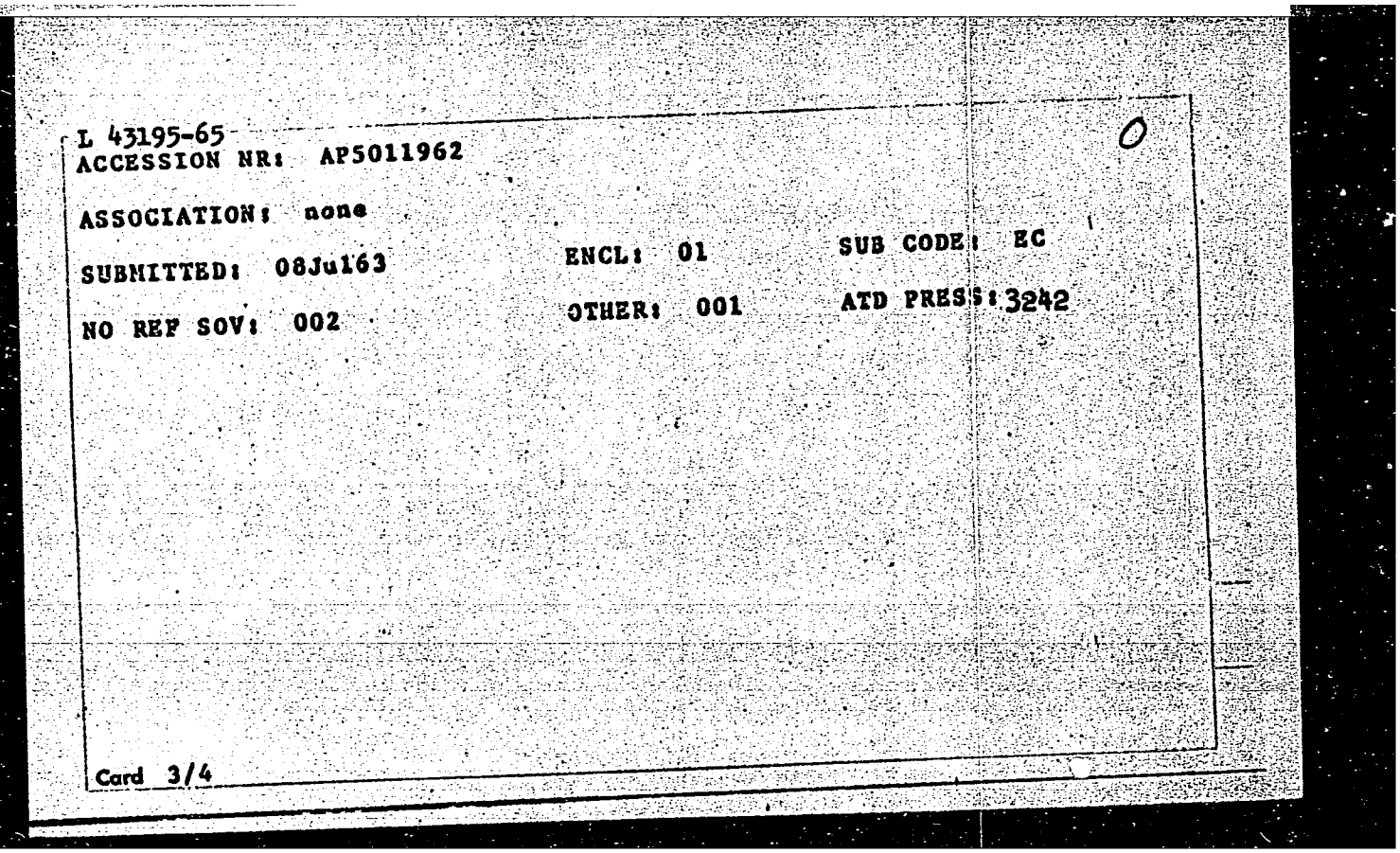
L 43195-65
ACCESSION NR: AP5011962

semiaxis of the polarization ellipse of the wave radiated by the slot. Ferrite plates of various sizes and compositions, both magnetized and demagnetized, were placed in the waveguide so that the center of the slot was approximately in the middle of the plate. The distance of the ferrite from the narrow wall was determined by the thickness of a polystyrene substrate. The intensity of the magnetizing field varied from 0 to 1200 oe. Without a ferrite plate or a matched load at the waveguide output, the ellipticity factor was 0.98. With a ferrite plate above, polarization remained virtually unchanged with or without magnetization. With the plate on a 2 mm-thick substrate, there was a sharp decrease in the ellipticity factor and an almost 60° change in the orientation angle both with and without magnetization. With the plate on a 4 mm-thick substrate without magnetization, the ellipticity factor was sharply reduced to 0.01, while the orientation angle was 33%. With a 600—1000 oe magnetic field, the ellipticity factor increased to about 0.8, while the orientation angle remained approximately 90°. When the magnetic field was increased to 1200 oe, the ellipticity factor reached 0.86, while the orientation angle decreased to 50°. Orig. art. has: 4 figures. [DW]

Card 2/4



L 43195-65
ACCESSION NR: AP5011962

ASSOCIATION: none

SUBMITTED: 08Jul63 ENCL: 01 SUB CODE: EC

NO REF SOV: 002 OTHER: 001 ATD PRESS: 3242

Card 3/4

SHUBARIN, Yu.V.; [illegible], N.N.

Dependence of a polarization pattern on the amplitude-phase distribution of the field in the apertures of superhigh frequency antennas. Izv.vys.ucheb.zav.; radiotekh. 8 no.5:561-571 S-O '65. (MIRA 18:12)

1. Submitted November 11, 1963.

L 29917-66 EWT(1)/T WR

ACC NR: AP5026723 SOURCE CODE: UR/0141/65/008/005/1044/1047

34
B

AUTHOR: Shubarin, Yu. V.; Gorobets, N. N.

ORG: Kharkov State University (Khar'kovskiy gosudarstvennyy universitet)

TITLE: Tuning circularly polarized antennas 15 B

SOURCE: IVUZ. Radiofizika, v. 8, no. 5, 1965, 1044-1047

TOPIC TAGS: antenna polarization, circular polarization, antenna tuning

ABSTRACT: The polarization diagram of an antenna is defined as the dependence of polarization of the antenna beam on direction in space. The magnetic field at the aperture is resolved into cartesian components with origin at the center of the aperture and the z-axis perpendicular to plane of the aperture. The polarization index is at a distant point

$$\dot{p}(\theta, \varphi) = \frac{\dot{E}_\varphi}{\dot{E}_\theta} = \frac{\dot{N}_y/\dot{N}_x - \operatorname{tg}\varphi}{1 + (\dot{N}_y/\dot{N}_x)\operatorname{tg}\varphi},$$

where θ and ϕ are the spherical coordinates of the observation point, E_ϕ, E_θ are the complex amplitudes of the orthogonal field components, $\dot{N}_y$ and $\dot{N}_x$ are projections of the electric radiation vector on the cartesian system. Polarization diagrams of mirror

UDC: 621.396.67.075.095.13

Card 1/2

L 29917-66

ACC NR: AP5026723

or lens type antennas are considered. Phase difference is assumed equal to $\pi/2$ throughout the aperture. Using McCoy and Kuskowski's conditions for the ellipticity of the field and assuming the coefficient of ellipticity less than unity, an equation is derived for rectangular apertures with coordinate axes parallel to the sides

$$\left|\frac{H_{y0}}{H_{x0}}\right| = \frac{2+A_{xx}}{2+A_{yx}} \cdot \frac{2+A_{xy}}{2+A_{yy}},$$

This equation was checked by experimental determination of the dependence of the elliptical coefficient of the field of a metal lens antenna with a square aperture on the ellipticity coefficient at the center of the aperture. The equation is shown to be sufficiently accurate for practical purposes. Equations are given for other aperture shapes. Orig. art. has: 2 figures.

SUB CODE: 09/ SUBM DATE: 04Jan65/ ORIG REF: 003/ OTH REF: 002.

Card 2/2

02411-67 EWT(1)/T WR/GD/JXT

ACC NR: AT6022332 SOURCE CODE: UR/0000/66/000/000/0026/0033

54
B+1

AUTHOR: Shubarin, Yu. V.; Gorobets, N. N.; Voloshin, V. A.

ORG: None

25B

TITLE: Effect which reflections in elliptically polarized antennas have on the polarization of their field of radiation

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya antennykh ustroystv. Doklady. Moscow, 1966, 26-33

TOPIC TAGS: circularly polarized antenna, electromagnetic wave reflection, antenna polarization

ABSTRACT: The authors consider reflections in elliptically polarized antennas and their effect on deviations in the polarization of the field radiated by the antenna from the theoretical value. Antennas with phasing sections in the feeder channel are considered. The phasing section is an anisotropic medium where the rate of propagation of electromagnetic waves depends on polarization and differs for the mutually perpendicular components. This section splits an incident linearly polarized wave into two orthogonally polarized components which are propagated at different velocities so that they are shifted in phase by a given angle at the output of the section resulting in an elliptically polarized field.

Card 1/2

L 02411-67

ACC NR: AT6022332

Formulas are given for determining the effect which reflections from the exciter aperture have on polarization of the radiated field and it is shown that the coefficient of ellipticity is considerably reduced by these reflections in the case of waveguide radiating elements. This effect is insignificant for horn radiators. Variations in the polarization of the field emitted by the antenna are also considered from the standpoint of reflector-exciter interaction. It is found that this type of interaction causes a considerable reduction in the coefficient of ellipticity for the entire antenna when the phasing section is adjusted for circular polarization in free space. This effect may be used if elliptical polarization is necessary in the center of the antenna aperture for producing a circularly polarized field at the principal maximum of antenna radiation since the directional diagram for the exciter is ordinarily not identical with respect to components and the amplitude distributions with respect to components differ at the aperture. Orig. art. has: 3 figures, 15 formulas.

SUB CODE: 20/ SUBM DATE: 22Mar66/ ORIG REF: 002

Cord 2/2 hs

ACC NR: AT6022333 SOURCE CODE: UR/0000/66/000/000/0033/0039

AUTHOR: Shubarin, Yu. V.; Lyashchenko, V. A.; Sadymak, P.

ORG: none

TITLE: Investigation of a slotted waveguide antenna of the inverted L type with a controlled radiation pattern

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya antennykh ustroystv. Doklady. Moscow, 1966, 33-39.

TOPIC TAGS: slot antenna, waveguide antenna, antenna radiation pattern

ABSTRACT: An investigation is made of a slotted waveguide antenna of the inverted L type with a controlled radiation pattern in which switching of the major lobe is accomplished by varying the electric distance between the slots by means of a longitudinally magnetized ferrite probe. A waveguide with dimensions shown in Fig. 1 and critical wavelength λ_{cr} = 7.35 cm is considered. In the theoretical part of the study, expressions for the radiated power of an obliquely shifted slot, for amplitudes of waves excited by the slot and for the radiation intensity of the slot are used to obtain formulas for computing both the emission and the reflection coefficients of the slot

Card 1/3

as functions of slot inclination φ and shifting y at λ_0 = 3.2 cm. It is found that with an increasing inclination angle from 0 to 90° the emission coefficient grows and reaches 0.36 at φ = 90°. At the same time, the reflection coefficient grows only negligibly. These results are found to be in good agreement with the experiment. Since a slotted waveguide antenna with an electrically controlled radiation pattern requires changes in the phase distribution in its aperture, a ferrite phase shifter of the Regge-Spencer type was used in the experiments. The antenna considered was of the six-slot type. Resonance slots, 1.6 cm long, were cut in one of the walls of the waveguide at an angle of 45° to its longitudinal axis. The spacing between the slots was equal to wavelength λ_g = 1.75 cm in the waveguide containing ferrite. Measurements were conducted at λ_0 = 3.2 cm. To determine the effect of the ferrite both on the radiated power and the shape of the radiation pattern, the slotted waveguide antenna was studied without a ferrite and with a nonmagnetized ferrite. It was established that the presence of the ferrite had little effect on the

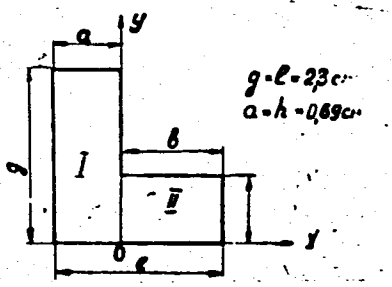


Fig. 1. Slotted waveguide antenna

L 21669-66 EWT(1)/T WR

ACC NR: AP6003549 SOURCE CODE: UR/0109/66/011/001/0003/0010

AUTHOR: Shubarin, Yu. V.; Gorobets, N. N.

ORG: none

TITLE: Polarization diagram of SHF antennas with complex-shape apertures [Reported at the 20th All-Union Conference of NTORiE, May 1964]

SOURCE: Radiotekhnika i elektronika, v. 11, no. 1, 1966, 3-10

TOPIC TAGS: SHF antenna, antenna directivity, antenna polarization

ABSTRACT: A curve of the antenna-field polarization (or polarization ratio) vs. direction is called a "polarization diagram." Formulas for the polarization diagrams of antennas with cophasal rectangular, elliptic, circular, ring, and rhombic apertures are derived. A comparison of these formulas reveals that the rhombic-aperture antenna has a nearest-to-constant polarization diagram. In order to obtain a circularly polarized field within the major lobe, the field in the aperture center should be elliptically polarized, the ellipse major semiaxis being parallel to that field component which has a smaller coefficient of aperture-area utilization. Orig. art. has: 5 figures and 18 formulas.

SUB CODE: 09 / SUBM DATE: 07Sep64 / ORIG REF: 004 / OTH REF: 002

Card 1/1

UDC: 621.396.67.029.64.095.1

L 0290-67 EWT(1)/T WR

ACC NR: AP6033259 SOURCE CODE: UR/0109/66/011/010/1870/1872

45
B

AUTHOR: Shubarin, Yu. V.; Voloshin, V. A.

ORG: Khar'kov State University im. A. M. Gor'kiy (Khar'kovskiy gosudarstvennyy universitet)

TITLE: A method for measuring gain of circularly polarized antennas

SOURCE: Radiotekhnika i elektronika, v. 11, no. 10, 1966, 1870-1872

TOPIC TAGS: circularly polarized antenna, antenna gain

ABSTRACT: A mirror-image method for measuring the gain of circularly polarized antennas is described. Gain is measured by placing the antenna, which has a phasing network in its waveguide run, at a distance R/2 from an ideally conducting plane. The distance R between the antenna aperture and its mirror image satisfies the conditions of a field at great distance. The reflected wave (with a reversed screw sense with respect to that of the incident) is received by the antenna, goes through the phaser and emerges as a plane-polarized wave at the feeder output. Since its polarization is orthogonal to that of the feeder, the wave is reflected from the feeder output and re-radiated by the antenna. The re-radiated wave has a reversed screw sense from that of the original wave. This re-radiated wave is reflected again

Card 1/2

L 02950-67
ACC NR: AP6033259

and then received by the antenna with a plane of polarization such that it can be admitted by the feeder, which converts it to an elliptically polarized wave. Antenna gain is calculated from axial ratio measurements made at the peak of the major lobe. Gain measurements were made with square, rectangular, and conical apertures fed by a circular waveguide. Error did not exceed 10% for axial ratios not smaller than 0.95 (axial ratios measured without the reflecting screen). Orig. art. has: 5 formulas.

SUB CODE: 09/ SUBM DATE: 31Jan66/ ORIG REF: 004/ OTH REF: 001
ATD PRESS:

Card 2/2 awm

ACC NR: AR6035191 SOURCE CODE: UR/0274/66/000/009/A033/A033

AUTHOR: Shubarin, Yu. V. ; Gorobets, N. N.

TITLE: Dependence of polarization on the phase-amplitude field distribution in an antenna aperture

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 9A241

REF SOURCE: Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb., vyp. 1, 1965, 172-186

TOPIC TAGS: shf antenna, antenna radiation pattern, antenna polarization, antenna lobe, antenna aperture

ABSTRACT: The dependence of polarization on phase-amplitude-field distribution in the aperture of an shf antenna is investigated. Conditions for the synthesis of a given polarization diagram are established. The dependence of the coefficient of ellipticity (C_e) in the center of the rectangular cophased aperture, required for circular polarization in the main maximum, on field distribution over the components is determined. The polarization diagram of a rectangular aperture is studied. In a cophased aperture the decrease of C_e becomes less with an increase

Card 1/2 UDC: 621.396.671.012.12

ACC NR: AR6035191

in the ratio of the aperture dimensions to the wavelength, and with a decrease in the differences between the drop rates of the orthogonal components of the field. Linear phase distortions lower C_e proportionately to the cosine of the angle of rotation of the major lobe of the antenna-radiation pattern. Quadratic phase distortions lower C_e only insignificantly if amplitude distributions of the orthogonal field components in the aperture are constant. There are five illustrations and a bibliography of 9 titles. [Translation of abstract] [DW]

SUB CODE: 09/

Card 2/2

ACC NR: AT7005947 SOURCE CODE: UR/0000/65/000/000/0137/0141

AUTHOR: Shubarin, Yu. V.; Yatsuk, L. P.

ORG: none

TITLE: The possibility of measuring radiation coefficients of cruciform slots taking into account their mutual interaction

SOURCE: Kharkov. Institut gornogo mashinostroyeniya, avtomatiki i vychislitel'noy tekhniki. Radiotekhnika, no. 1, 1965, 137-141

TOPIC TAGS: microwave antenna, electromagnetic radiation, slot antenna, circularly polarized antenna, rectangular waveguide, waveguide antenna, circular waveguide, klystron, antenna power

ABSTRACT: The radiating properties of narrow slots crossed at right angles and located in the broad wall of a rectangular waveguide section were studied. Fifteen narrow crossed slots whose lengths increased uniformly from 8 to 15.7 mm were cut along the center of the broad flange of a rectangular waveguide with a 12.6 x 28.5-mm crossection. The centers of the slots were spaced at 38.6 mm intervals to correspond to the wavelength at 9375 MHz. The antenna formed by the slot array was fed by a klystron oscillator on one end, and was terminated by a matched load with a VSWR of 1.08 on the other. The ellipticity factors

Card 1/2 UDC: none

ACC NR: AT7005947

and amplitudes of the radiated power along the slotted waveguide were measured with a waveguide probe consisting of a circular waveguide with a plate that absorbed the undesired mode, a detector section, and a measuring amplifier. Measurements were made at two frequencies: 9375 and 9272 MHz. For each frequency the antenna was fed both from the side with smaller slots and from the side with larger slots. Since these circularly-polarized slots are impedance-matched, the VSWR of the antenna input was fairly good i.e., varied between 1.12 and 1.28 (the ellipticity factors did not go below 0.8). The radiated power of most individual slots in the array was smaller than it would have been for single slots because of their mutual interaction. As was expected, the strongest interaction was observed among the center slots of the array. The radiation factor was somewhat smaller when the antenna was fed from the side with larger slots than when it was fed from the smaller-slotted side. Orig art. has: 2 figures and 11 formulas. [IV]

SUB CODE: 09/ SUBM DATE: none/ OTH REF: 001

Card 2/2

ACC NR: AP7002674 SOURCE CODE: UR/0109/67/012/001/0140/0142

AUTHOR: Shubarin, Yu. V.; Chebotarev, V. I.

ORG: none

TITLE: Slotted-waveguide radiator with controlled polarization

SOURCE: Radiotekhnika i elektronika, v. 12, no. 1, 1967, 140-142

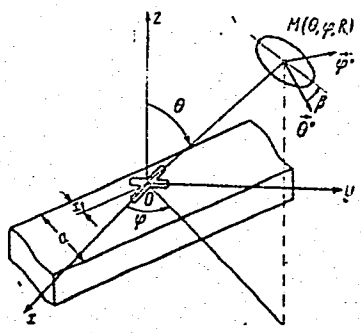
TOPIC TAGS: slot antenna, antenna polarization, waveguide antenna

ABSTRACT: Impossibility of controlling the polarization of radiation from a cross-slot waveguide-type radiating element, which was suggested by W. H. Watson (IEEJ, 1946, 93, pt. 3A, 747) and thoroughly investigated by A. J. Simmons (IRE Trans., AP-5, 1957, 1, 31), has been regarded as an essential drawback of this element. The present article proposes a method for controlling the polarization of the field radiated from the slot at any angle (see figure) by varying the ratios of amplitudes and phase differences of the waves exciting the waveguide from opposite directions. The polarization can be controlled within the entire frequency passband of the waveguide. The new method is based on the well-known fact that when two opposite-rotation polarization ellipses with equal ellipticities are combined, any specified polarization ellipsis can be obtained by proper selection of their amplitude and

Card 1/2 UDC: 621.396.677.71

ACC NR: AP7002674

phase-difference ratios. A formula for the β-angle in terms of a, λ, x_1, θ, Ψ (see figure) is derived. Orig. art. has: 3 figures and 7 formulas.



SUB CODE: 09 / SUBM DATE: 29Apr66 / ORIG REF: 001 / OTH REF: 002

Card 2/2

KIROV, I., dotsent; SHUBAROV, K.; VYLKANOV, I. (Sofiya)

Megakaryocytic leukemias and their relation to osteomyelosclerosis. Probl.gemat.i perel.krovi no.3:15-19 '62. (MIRA 15:3)

1. Iz kafedry infektsionnykh bolezney (zav. - dotsent I. Kirov) Instituta usovershenstvovaniya vrachey i kafedry patologicheskoy anatomii (zav. - prof. B. Kyrdzhiyev) Meditsinskogo instituta.
(LEUKEMIA)

TANEV, Iv.; POPOV, An.; TODOROV, M.; ZHELIAZKOV, S.; SHUBAROV, K.; RANGELOVA, St.; LIUTSKANOV, St.

Differential diagnosis of suspected cases of poliomyelitis. Nauch. tr. vissh. med. inst. Sofia 40 no.3:147-160 '61.

1. Predstavena ot prof. P. Verbev, rukovoditel na Katedrata po infektsiozni bolesti i epidemiologiia, Direktor na klinikata: prof. Iv. Tanev.

(POLIOMYELITIS diag)

SHUBAROV, K.

Value and possibilities of clinical-laboratory tests in the differential diagnosis of jaundice. Suvr. med. 14 no.11: 44-50 '63.

SHUBAROV, K.; IVANOV, Em.; KEREKOVSKI, Iv.; GOSPODINOVA, V.

Normal values of beta-lipoproteins.Suvr. med. (Sofiia) 16 no.10:607-611 '65.

1. I infektsiozna bolnitsa, Sofiia (gl. lekar d-r A. Selektar); Institut po khranene (direktor - prof. T. Tashev), Bolgarska akademiia na naukite; Katedra po detski bolesti (rukovoditel - prof. Br. Bratanov) Institut z spetsiializatsiia i usuvurshenstvuvane na lekarite, Sofiia.

SHUBART, F.

Solution to the problem of laminar convection in the case of a linear heat source. Inzh.fiz.zhur. 4 no.7:105-108 Jl '61. (MIRA 14:8)

1. Nauchno-issledovatel'skiy institut khimicheskogo oborudovaniya, Brno, Chekhoslovatskaya, SSR.
(Boundary value problems) (Heat--Convection)

SALATINYAN, I.Z.; SHUBAYEV, A.M.; BASHKIRTSEV, M.I.

Separating beds with high temperatures. Neftepprom. delo no.4: 18-20 '64. (MIRA 17:6)

1. Stavropol'skiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.

SALATINYAN, I.Z.; SHUBAYEV, A.M.; BASHKIRTSEV, M.I.

New reservoir disconnectors. Izv.vys.ucheb.zav.;neft' i gaz 7 no. 1:113 '64. (MIRA 17:7)

1. Pyatigorskiy filial Groznenskogo neftyanogo nauchno-issledovatel'skogo instituta.

SHUBAYEV, A.M.; SALATINYAN, I.Z.; SAL'TARSKIY, Yu.V.

Causes of breakage in the lift tubing in flowing wells on the fields of the Stavropol Territory. Neftepprom. delo no.2:20-23 '65. (MIRA 18:5)

1. Stavropol'skiy filial Groznenskogo neftyanogo nauchno-issledovatel'skogo instituta.

SHYRAEV, L. A.

Mbr. Physics Inst. im. P. N. Lebdev, Dept. Physico-Math Sci., Acad. Sci., -c1949-.
"Density Spectrum of Streams of Penetration Particles in Extensisive Atmospheric Showers of Cosmic Ray ," Dokl. AN, 69, No. 3, 1949.

NEVEL'SHTEYN, G.S.; SHUBAYEV, L.O.

Conference on the geography of the capitalist countries and those struggling for national independence. Izv.Vses.geog.ob-va 93 no.5:458-460 S-O '61. (MIRA 14:10)

(Geography--Congresses)

SHUBAYEV, L.P.

SHUBAYEV, L.P.; IVANOV, N.N.

Continents and the area of Europe. Izv.Vses.geog.ob-va 86 no.4:353-354 Jl-Ag '54. (MLRA 7:9)
(Continents)

SHUBAYEV, L.P.

The Surgut "polesye" of the West Siberian Plain. Izv.Vses.geog. ob-va 88 no.2:167-169 Mr-Ap '56. (MLRA 9:8)
(Surgut lowland--Physical geography)

SHUBAYEV, L.P.

Committee on regional studies and tourism. Izv.Vses.geog.ob-va 88 no.4:422-423 Jl-Ag '56. (MLRA 9:10)

(Tourism) (Geography--Study and teaching)

SHUBAYEV, L.P.

Macrorelief zones and their relationship with V.V.Dokuchaev's natural zones. Geog.sbor. no.15:132-137 '62. (MIRA 15:12)
(Landforms)

SHUBAYEV, L.P.

Antisymmetrical zoning of the earth's macrorelief in the contemporary stage of its development. Uch. zap. Ped. inst. Gerts. 244:29-38 '63. (MIRA 18:3)

KADENSKIY, A.A., doktor geol.-miner. nauk, prof.; SHUBAYEV, L.P., otv. red.

[Geological excursions in the surroundings of Leningrad; textbook on geological field work] Geologicheskie ekskursii v okrestnostiakh Leningrada; uchebnoe posobie po polevoi geologicheskoi praktike. Leningrad, Leningr. gos. pedagog. in-t 1963. 190 p. (MIRA 17:5)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A.I.Gertsena (for Kadenskiy).

BALABAYEV, V.A., inzh.; GASSOKH, A.O., inzh.; SHUBAYEV, N.N., inzh.

Parallel operation of SGT generators. Mekh. i elek.sots.sel'-khoz. no.4:42-44 '57. (MIRA 12:4)
(Electric generators)

MEOS,A.I., doktor tekhnicheskikh nauk; RODIONOV,I.M., inzhener; SOROKIN,L.Z., kandidat tekhnicheskikh nauk; BAULINA,N.L., inzhener; SHUBAYEV,N.V., inzhener

Artificial karakul made of viscose fiber. Leg.prom.15 no.7:43-44 Jl'55. (MLRA 8:10)

(Fur, Artificial)

Shubayev, N V

USSR/Chemical Technology. Chemical Products and Their Application--Synthetic fibers. I-25

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10080

Author : Geysberg, S. M., Shubayev, N. V., and Shemkov, N.K.
Inst : Not Given
Title : Experience with the Operation of Regeneration Equipment.

Orig Pub: Tekstil'naya prom-st, 1956, No 5, 18-19

Abstract: Equipment for the removal of CS_2 from staple viscose fiber during the plastification of the fiber with hot water at 93-95°, with subsequent separation of the CS_2 from the water vapor by the method of fractional condensation, is described. The regeneration equipment assures the recycle of up to 30% of the CS_2.

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SKRAMTAYEV, B.G., professor, doktor tekhnicheskikh nauk; SHUB[redacted], dotsent, kandidat tekhnicheskikh nauk; BUDILOV, A.A., dotsent, kandidat tekhnicheskikh nauk.

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SHUBENKIN, P.F.

28-58-1-8/34

AUTHORS: Skramtayev, B.G., Doctor of Technical Sciences, Shubenkin, P.F., Candidate of Technical Sciences, and Budilov, A.A., Candidate of Technical Sciences

TITLE: Standard Calculation Method for Concrete Mixtures (Yedinyy metod rascheta sostava betona)

PERIODICAL: Standartizatsiya, 1958, # 1, pp 24-28 (USSR)

ABSTRACT: A standard calculation method for concrete mixtures does not exist in the USSR, although the necessity of such method was pointed out at the 4th All-Union Conference on the Problems of Concrete in 1948. At present, more than ten methods are in use and more have been suggested. All the formulas suggested since the end of the last century and (including the two formulas of Professor N.M. Belyayev and the Swiss concrete specialist Bolomey (transliterated), now in use), as well as the method recommended at the 1948 conference, are briefly mentioned and criticized.

The authors suggest a calculation method that can be used as a general standard. The method was developed during the course of investigations made by the authors since 1950, and consists of an introduction of new coefficients into

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SKRAMTAYEV, B.G., prof., doktor tekhn. nauk,; SHUBENKIN, P.F., kand. tekhn. nauk,; BUDILOV, A.A., kand. tekhn. nauk

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(Cement)
(Sand)